AMENDMENTS TO THE CLAIMS:

1. (Previously Presented) A virtual output queuing controlling device, comprising:

a class information allocation section;

a CBR class bandwidth management section;

K class bandwidth management sections (K is a positive integer that is one or more);

a connection request generation section; and

a cell read-out controlling section,

wherein said class information allocation section allocates received class information of each cell to one class bandwidth management section out of said class bandwidth management sections,

wherein said CBR class bandwidth management section measures a cell number of a CBR class, and

wherein, based on the received class information, said class bandwidth management sections determine a conformance or a non-conformance cell by cell, and measure a conforming cell number or a non-conforming cell number by classes, and

wherein, based on a cell number of said CBR class, a total conforming cell number of each class, and a total non-conforming cell number of each class, said connection request generation section generates a connection request to a switch scheduler, and

wherein said cell read-out controlling section decides which cells are to be read out when a connection permission is received from said switch scheduler, based on the conforming cell number and the non-conforming cell number of said CBR class bandwidth management section and each of said class bandwidth management sections.

2. (Previously Presented) The virtual output queuing controlling device according to claim 1, characterized in that said cell read-out controlling section:

in an event that either the conforming cell or the non-conforming cell was included in the received CBR class, selects said CBR class; and

subtracts one from the conforming cell number in said CBR class.

3. (Previously Presented) The virtual output queuing controlling device according to claim 1, characterized in that said connection request generation section:

in an event that said CBR class was received, adds the cell number of said CBR class;

in an event that the cell number of said CBR class exceeds a predetermined value, generates the connection request with a first priority to said switch scheduler; and

subtracts only said predetermined value from the cell number of said CBR class.

4. (Previously Presented) The virtual output queuing controlling device according to claim 1, characterized in that:

said class bandwidth management sections:

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in an event that said CBR class was not received and yet that a remaining credit of an assurance bandwidth portion is one or more, add the conforming cell number and the total conforming cell in its class; and

said connection request generation section:

in an event that said total conforming cell number exceeds a predetermined value, generates the connection request with a second priority to said switch scheduler; and

subtracts only said predetermined value from said total conforming cell number.

5. (Previously Presented) The virtual output queuing controlling device according to claim 1, characterized in that:

said class bandwidth management sections, in an event that said CBR class was not received and yet that a remaining credit of an assurance bandwidth portion is below one, add the non-conforming cell number and the total non-conforming cell number in its class; and

said connection request generation section:

in an event that said total non-conforming cell number exceeds a predetermined value, sends the connection request with a third priority to said switch scheduler; and

subtracts only said predetermined value from said total non-conforming cell number.

6. (Previously Presented) The virtual output queuing controlling device according to claim 1, characterized in that said cell read-out controlling section selects the cells to be sent in an order of the cell of said CBR class, the conforming cell, and the non-conforming cell.

7. (Previously Presented) A virtual output queuing controlling device, comprising:

a class information allocation section;

a CBR class bandwidth management section;

K class bandwidth management sections (K is a positive integer that is one or more);

a connection request generation section; and

a cell read-out controlling section,

wherein said class information allocation section allocates received class information of each cell to one class bandwidth management section of said class bandwidth management sections, and

wherein said CBR class bandwidth management section measures a cell number of a CBR class, and

wherein, based on the received class information, said class bandwidth management sections determine a conformance or a non-conformance cell by cell, and measure a conforming cell number or a non-conforming cell number for each class, and

wherein, based on the cell number of the conforming cell in said CBR class

bandwidth management section and each of said class bandwidth management sections,

and a total number of the non-conforming cells of each class, said connection request

generation section generates a connection request to a switch scheduler, and

wherein said cell read-out controlling section, based on the conforming cell

number and the non-conforming cell number of said CBR class bandwidth management

section and each of said class bandwidth management sections, decides which cells are to

be read out when a connection permission is received from said switch scheduler.

8. (Previously Presented) The virtual output queuing controlling device according to

claim 7, characterized in that said cell read-out controlling section:

in an event that either the conforming cell or the non-conforming cell was

included in the received CBR class, selects said CBR class; and

subtracts one from the conforming cell number in said CBR class.

9. (Previously Presented) The virtual output queuing controlling device according to

claim 7, characterized in that said connection request generation:

in an event that said CBR class was received, adds the cell number of said CBR

class;

in an event that the cell number of said conforming cell exceeds a predetermined

value, sends a connection request with a first priority to said switch scheduler; and

subtracts only said predetermined value from said total conforming cell number.

10. (Previously Presented) The virtual output queuing controlling device according to claim 7, characterized in that:

said class bandwidth management sections, in an event that said CBR class was not received and yet that remaining credit of an assurance bandwidth portion is one or more, add the conforming cell number and the total conforming cell number in its class; and

said connection request generation section:

in an event that said total conforming cell number exceeds a predetermined value, sends a connection request with a first priority to said switch scheduler; and

subtracts only said predetermined value from said total conforming cell number.

11. (Previously Presented) The virtual output queuing controlling device according to claim 7, characterized in that:

said class bandwidth management sections, in an event that said CBR class was not received and yet that a remaining credit of an assurance bandwidth portion is below one, add the non-conforming cell number and the total non-conforming cell number in its class; and

said connection request generation section:

in an event that said total non-conforming cell number exceeds a

predetermined value notifies connection request with a second priority to said switch

scheduler; and

subtracts only said predetermined value from said total non-

conforming cell number.

12. (Previously Presented) The virtual output queuing controlling device according to

claim 7, characterized in that said cell read-out controlling section selects the cells to be

sent in an order of the cell of said CBR class, the conforming cell, and the non-

conforming cell.

13. (Previously Presented) A virtual output queuing controlling device, comprising:

a class information allocation section;

a CBR class bandwidth management section;

K class bandwidth management sections (K is a positive integer that is one or

more);

a connection request generation section; and

a cell read-out controlling section,

wherein said class information allocation section allocates received class

information of each cell to one class bandwidth management section out of said class

bandwidth management sections, and

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wherein said CBR class bandwidth management section measures a cell number of a CBR class, and

wherein, based on the received class information, said class bandwidth management sections determine a conformance or a non-conformance cell by cell, and measure a conforming cell number or a non-conforming cell number by classes, and

wherein, based on a total number of the conforming cell and a total number of the non-conforming cell of each class including said CBR class, said connection request generation section generates a connection request to a switch scheduler, and

wherein said cell read-out controlling section, based on the conforming cell number and the non-conforming cell number of said CBR class bandwidth management section and each of said class bandwidth management sections, decides which cells are to be read out when the connection permission was received from said switch scheduler, and

wherein said cell read-out controlling section selects the cells to be sent in order of the cell of said CBR class, the conforming cell, and the non-conforming cell.

14. (Previously Presented) The virtual output queuing controlling device according to claim 13, characterized in that said cell read-out controlling section:

in an event that either the conforming cell or the non-conforming cell was included in the received CBR class, selects said CBR class;

in an event that said CBR class comprises a class that includes the conforming cell, subtracts one from the conforming cell number; and

in an event that said CBR class comprises a class that includes the non-conforming

cell, subtracts one from the non-conforming cell number.

15. (Previously Presented) The virtual output queuing controlling device according to

claim 13, characterized in that said cell read-out controlling section:

in an event that the conforming cell was included in the received CBR class,

selects said CBR class; and

subtracts one from the count number of the conforming cell in said CBR class.

16. (Original) The virtual output queuing controlling device according to claim 13,

characterized in that said CBR class bandwidth management section and each of said

class bandwidth management sections have an identical configuration.

17. (Previously Presented) The virtual output queuing controlling device according to

claim 13, characterized in that said connection request generation section:

in an event that said CBR class was received, adds the cell number of said CBR

class;

in an event that the cell number of said CBR class exceeds a predetermined value,

generates the connection request with a first priority to said switch scheduler; and

subtracts only said predetermined value from the total number of said CBR class.

18. (Previously Presented) The virtual output queuing controlling device according to claim 13, characterized in that:

said class bandwidth management sections are sections that,

in an event that said CBR class was not received and yet that a remaining credit of an assurance bandwidth portion is one or more, add the conforming cell number and the total conforming cell number in its class; and

said connection request generation section:

in an event that said total conforming cell number exceeds a predetermined value, generates the connection request with a second priority to said switch scheduler; and

subtracts only said predetermined value from said total conforming cell number.

19. (Previously Presented) The virtual output queuing controlling device according to claim 13, characterized in that:

said class bandwidth management sections,

in an event that said CBR class was not received and yet that a remaining credit of an assurance bandwidth portion is below one, add the non-conforming cell number and the total non-conforming cell number in its class; and

said connection request generation section:

in an event that said total non-conforming cell number

exceeded a predetermined value, notifies connection request with a third priority to said

switch scheduler; and

subtracts only said predetermined value from said total non-conforming

cell number.

20.-21. (Canceled)

22. (Currently Amended) ~~The virtual output queuing controlling device according to~~

~~claim 21, further comprising:~~

A virtual output queuing controlling device in an input buffering switch with a

virtual output queuing technique, comprising:

a first specialized class for only a CBR traffic;

a second class for the other traffics than the CBR traffic;

a cell read-out controlling section that reads out cells from each of said classes;

a connection request generation section that makes a connection request for a

switch scheduler, which can execute a two-step priority control, characterized in that,

when said connection request generation section receives the connection request from

said switch scheduler, said cell read-out controlling section reads out the cells from said

first class prior to said second class;

a first counter that measures a cell number in said first class; and

a second counter that measures a cell number in said second class, ~~characterized in~~

~~that~~wherein said connection request generation section makes the connection request for

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said switch scheduler, responding to the cell number that said first counter and said

second counter measured.

23. (Currently Amended) ~~The virtual output queuing controlling device according to~~

~~claim 21,~~A virtual output queuing controlling device in an input buffering switch with a

virtual output queuing technique, comprising:

      a first specialized class for only a CBR traffic;

      a second class for the other traffics than the CBR traffic;

      a cell read-out controlling section that reads out cells from each of said classes;

      a connection request generation section that makes a connection request for a

switch scheduler, which can execute a two-step priority control, characterized in that,

when said connection request generation section receives the connection request from

said switch scheduler, said cell read-out controlling section reads out the cells from said

first class prior to said second class;

      ~~characterized in that~~wherein said cell read-out controlling section makes

bandwidth determination for both of said first class and said second class, and responding

to a result, reads out the cells from said first class when a connection permission is

received.

24. (Previously Presented) An input buffering switch, comprising:

      a class information allocation section;

      a CBR class bandwidth management section;

K class bandwidth management sections (K is a positive integer that is one or more);

a connection request generation section; and

a cell read-out controlling section,

wherein said class information allocation section allocates received class information of each cell to one class bandwidth management section out of said class bandwidth management sections,

wherein said CBR class bandwidth management section measures a cell number of a CBR class, and

wherein, based on the received class information, said class bandwidth management sections determine a conformance or a non-conformance cell by cell, and measure a conforming cell number or a non-conforming cell number by classes, and

wherein, based on the cell number of said CBR class, a total conforming cell number of each class, and a total non-conforming cell number of each class, said connection request generation section generates a connection request to a switch scheduler, and

wherein said cell read-out controlling section decides which cells are to be read out when a connection permission is received from said switch scheduler, based on the conforming cell number and the non-conforming cell number of said CBR class bandwidth management section and each of said class bandwidth management sections.

25. (Previously Presented) An input buffering switch, comprising:

a class information allocation section;

a CBR class bandwidth management section;

K class bandwidth management sections (K is a positive integer that is one or more);

a connection request generation section; and

a cell read-out controlling section,

wherein said class information allocation section allocates received class information of each cell to one class bandwidth management section of said class bandwidth management sections, and

wherein said CBR class bandwidth management section measures a cell number of a CBR class, and

wherein, based on the received class information, said class bandwidth management sections determine a conformance or a non-conformance cell by cell, and measure a conforming cell number or a non-conforming cell number for each class, and

wherein, based on the cell number of the conforming cell in said CBR class bandwidth management section and each of said class bandwidth management sections, and a total number of the non-conforming cells of each class, said connection request generation section generates a connection request to a switch scheduler, and

wherein said cell read-out controlling section, based on the conforming cell number and the non-conforming cell number of said CBR class bandwidth management section and each of said class bandwidth management sections, decides which cells are to be read out when a connection permission is received from said switch scheduler.

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26. (Previously Presented) An input buffering switch, comprising:

a class information allocation section;

a CBR class bandwidth management section;

K class bandwidth management sections (K is a positive integer that is one or

more);

a connection request generation section; and

a cell read-out controlling section,

wherein said class information allocation section allocates received class

information of each cell to one class bandwidth management section out of said class

bandwidth management sections, and

said CBR class bandwidth management section measures a cell number of a CBR

class, and

wherein, based on the received class information, said class bandwidth

management sections determine a conformance or a non-conformance cell by cell, and

measure a conforming cell number or a non-conforming cell number by classes, and

wherein, based on a total number of the conforming cells and a total number of the

non-conforming cell of each class including said CBR class, said connection request

generation section generates a connection request to a switch scheduler, and

wherein said cell read-out controlling section, based on the conforming cell

number and the non-conforming cell number of said CBR class bandwidth management

section and each of said class bandwidth management sections, decides which cells are to

be read out when a connection permission is received from said switch scheduler, and

wherein said cell read-out controlling section selects the cells to be sent in an order

of the cell of said CBR class, the conforming cell, and the non-conforming cell.

27.-28. (Canceled)

29. (Previously Presented) A controlling method of a virtual output queuing controlling

device, said method comprising:

a first step of allocating received class information of each cell to one of a

plurality of class bandwidth management sections;

a second step of measuring a cell number of a CBR class;

a third step of, based on the received class information, determining a

conformance or a non-conformance cell by cell to measure a conforming cell number and

a non-conforming cell number by classes;

a fourth step of, based on said cell number of the CBR class, a total number of the

conforming cells of each class, and a total number of the non-conforming cells of each

class, generating a connection request to a switch scheduler; and

a fifth step of, based on the conforming cell number and the non-conforming cell

number in said CBR class bandwidth management section and each of said class

bandwidth management sections, deciding which cells are to be read out when a

connection permission is received from said switch scheduler.

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30. (Previously Presented) The controlling method of the virtual output queuing

controlling device according to claim 29, characterized in that said fifth step comprises

the steps of:

in an event that either of the conforming cell or the non-conforming cell was

included in the received CBR class, selecting said CBR class; and

subtracting one from a count number of the conforming cell number in said CBR

class.

31. (Previously Presented) The controlling method of the virtual output queuing

controlling device according to claim 29, characterized in that said fourth step comprises

the steps of:

in an event that said CBR class was received, adding the cell number of said CBR

class;

in an event that the cell number of said CBR class exceeded a predetermined

value, generating the connection request with a first priority to said switch scheduler; and

subtracting only said predetermined value from the cell number of said CBR class.

32. (Previously Presented) The controlling method of the virtual output queuing

controlling device according to claim 29, characterized in that:

said third step comprises the step of, in an event that the said CBR class was not

received, and yet that a remaining credit of a guaranteed bandwidth portion is one or

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more, adding the conforming cell number and the total conforming cell number in its class; and

said fourth step comprising the steps of:

in an event that said total conforming cell number exceeds a predetermined value, generating the connection request with a second priority to said switch scheduler; and

subtracting only said predetermined value from said total conforming cell number.

33. (Previously Presented) The controlling method of the virtual output queuing controlling device according to claim 29, characterized in that:

said third step comprises the step of, in an event that the said CBR class was not received, and yet that a remaining credit of a guaranteed bandwidth portion is below one, adding the non-conforming cell number and the total non-conforming cell number in its class; and

said fourth step comprising the steps of:

in an event that said total non-conforming cell number exceeds a predetermined value, notifying connection request with a third priority to said switch scheduler; and

subtracting only said predetermined value from said total non-conforming cell number.

34. (Previously Presented) The controlling method of the virtual output queuing

controlling device according to claim 29, characterized in that, in said fifth step, the cells

to be sent are selected in an order of the cell of said CBR class, the conforming cell and

the non-conforming cell.

35. (Previously Presented) A controlling method of a virtual output queuing controlling

device, said method comprising:

a first step of allocating received class information of each cell to one of a

plurality of class bandwidth management sections;

a second step of measuring a cell number of a CBR class;

a third step of, based on the received class information, determining a

conformance or a non-conformance cell by cell to measure a conforming cell number and

a non-conforming cell number by classes;

a fourth step of, based on a total number of the conforming cells of said CBR class

and each of said class bandwidth management sections, and a total number of the non-

conforming cells of each class, generating a connection request to a switch scheduler; and

a fifth step of, based on the conforming cell number and the non-conforming cell

number in said CBR class bandwidth management section and each of said class

bandwidth management sections, deciding which cells are to be read out when a

connection permission is received from said switch scheduler.

36. (Previously Presented) The controlling method of the virtual output queuing

controlling device according to claim 35, characterized in that said fifth step comprises

the steps of:

in an event that either of the conforming cell or the non-conforming cell was

included in the received CBR class, selecting said CBR class; and

subtracting one from a count number of the conforming cell number in said CBR

class.

37. (Previously Presented) The controlling method of the virtual output queuing

controlling device according to claim 35, characterized in that said fourth step comprises

the steps of:

in an event that said CBR class was received, adding the cell number of said CBR

class;

in an event that the cell number of said CBR class exceeds a predetermined value,

generating the connection request with a first priority to said switch scheduler; and

subtracting only said predetermined value from the cell number of said CBR class.

38. (Previously Presented) The controlling method of the virtual output queuing

controlling device according to claim 35, characterized in that:

said third step comprises the step of, in an event that the said CBR class was not

received, and yet that a remaining credit of a guaranteed bandwidth portion is one or

more, adding the conforming cell number and the total number of the conforming cell in its class; and

said fourth step comprising the steps of:

in an event that said total conforming cell number exceeds a predetermined value, generating the connection request with a first priority to said switch scheduler; and

subtracting only said predetermined value from said total conforming cell number.

39. (Previously Presented) The controlling method of the virtual output queuing controlling device according to claim 35, characterized in that:

said third step comprises the step of, in an event that said CBR class was not received, and yet that a remaining credit of a guaranteed bandwidth portion is below one, adding the non-conforming cell number and the total non-conforming cell number in its class; and

said fourth step comprising the steps of:

in an event that said total non-conforming cell number exceeds a predetermined value, generating the connection request with a second priority to said switch scheduler; and

subtracting only said predetermined value from said total non-conforming cell number.

40. (Previously Presented) The controlling method of the virtual output queuing controlling device according to claim 35, characterized in that, in said fifth step, the cells to be sent are selected in an order of the cell of said CBR class, the conforming cell and the non-conforming cell.

41. (Previously Presented) A controlling method of a virtual output queuing controlling device, said method comprising:

a first step of allocating received class information of each cell to one of a plurality of class bandwidth management sections;

a second step of measuring a cell number of a CBR class;

a third step of, based on the received class information, determining a conformance or a non-conformance cell by cell to measure a conforming cell number and a non-conforming cell number by classes;

a fourth step of, based on a total number of the conforming cells and a total number of the non-conforming cells of each class including said CBR class, generating a connection request to a switch scheduler; and

a fifth step of, based on the conforming cell number and the non-conforming cell number in said CBR class bandwidth management section and each of said class bandwidth management sections, deciding which cells are to be read out when a connection permission is received from said switch scheduler,

wherein, in said fifth step, the cells to be sent are selected in an order of the cell of said CBR class, the conforming cell and the non-conforming cell.

42. (Previously Presented) The controlling method of the virtual output queuing controlling device according to claim 41, characterized in that said fifth step comprises the steps of:

in an event that either of the conforming cell or the non-conforming cell was included in the received CBR class, selecting said CBR class;

in an event that said CBR class includes the conforming cell, subtracting one from the count number of the conforming cell number; and

in the event that said CBR class is a class that includes the non-conforming cell, subtracting one from a count number of the non-conforming cell number.

43. (Previously Presented) The controlling method of the virtual output queuing controlling device according to claim 41, characterized in that said fifth step comprises the steps of:

in an event that the conforming cell was included in the received CBR class, selecting said CBR class; and

subtracting one from a count number of the conforming cell number in said CBR class.

44. (Previously Presented) The controlling method of the virtual output queuing

controlling device according to claim 41, characterized in that said fourth step comprises

the step of:

in an event that said CBR class was received, adding the cell number of said CBR

class;

in an event that the cell number of said CBR class exceeds a predetermined value,

generating the connection request with a first priority to said switch scheduler; and

subtracting only said predetermined value from said cell number of the CBR class.

45. (Previously Presented) The controlling method of the virtual output queuing

controlling device according to claim 41, characterized in that:

said third step comprises the step of, in an event that said CBR class was not

received, and yet that a remaining credit of a guaranteed bandwidth portion is one or

more, adding the conforming cell number and the total conforming cell number in its

class; and

said fourth step comprising the steps of:

in an event that said total conforming cell number exceeds a predetermined

value, generating the connection request with a second priority to said switch scheduler;

and

subtracting only said predetermined value from said total conforming cell

number.

46. (Previously Presented) The controlling method of the virtual output queuing

controlling device according to claim 45, characterized in that:

said third step comprises the step of, in an event that said CBR class was not

received, and yet that a remaining credit of a guaranteed bandwidth portion is below one,

adding the non-conforming cell number and the total non-conforming cell number in its

class; and

said fourth step comprising the steps of:

in an event that said total non-conforming cell number exceeds a

predetermined value, generating the connection request with a third priority to said switch

scheduler; and

subtracting only said predetermined value from said total non-conforming

cell number.

47. (Previously Presented) A machine-readable recording medium on which is stored a

computer program which when executed causes a computer to function as:

a CBR class bandwidth management section that measures a cell number of a

CBR class;

at least one class bandwidth management section that, based on received class

information, determines a conformance or a non-conformance cell by cell to measure a

conforming cell number and a non-conforming cell number by classes;

a class information allocation section that allocates the received class information

of each cell to one class bandwidth management section out of said class bandwidth

management sections:

based on a cell number of said CBR class, a total number of the

conforming cells of each class, and a total number of the non-conforming cells of each

class, a connection request generation section that generates a connection request to a

switch scheduler; and

when a connection permission is received from said switch scheduler,

based on said CBR class bandwidth management section and each of said class

bandwidth management sections, a cell read-out controlling section that decides which

cells are to be read out.

48. (Previously Presented) The machine-readable recording medium on which is stored

a computer program according to claim 47, characterized in that said cell read-out

controlling section:

in an event that either of the conforming cell or the non-conforming cell was

included in the received CBR class, selects said CBR class; and

subtracts one from the count number of the conforming cell number in said CBR

class.

49. (Previously Presented) The machine-readable recording medium on which is stored a computer program according to claim 47, characterized in that said connection request generation section:

in an event that said CBR class was received, adds the cell number of said CBR class;

in an event that said cell number of the CBR class exceeds a predetermined value, generates the connection request with a first priority to said switch scheduler; and

subtracts only said predetermined value from the cell number of said CBR class.

50. (Previously Presented) The machine-readable recording medium on which is stored a computer program according to claim 47, characterized in that:

said class bandwidth management section:

in an event that said CBR class was not received, and yet that a remaining credit of a guaranteed bandwidth portion is one or more, adds the conforming cell number and the total conforming cell number in its class; and

said connection request generation section:

in an event that said total conforming cell number

exceeds a predetermined value, generates the connection request with a second priority to said switch scheduler; and

subtracts said only said predetermined value from said total conforming cell number.

51. (Previously Presented) The machine-readable recording medium on which is stored

a computer program according to claim 47, characterized in that:

said class bandwidth management section, in an event that said CBR class was not

received, and yet that a remaining credit of a guaranteed bandwidth portion is below one,

adds the non-conforming cell number and the total non-conforming cell number in its

class; and

said connection request generation section:

in an event that said total non-conforming cell number

exceeds a predetermined value, generates the connection request with a

third priority to said switch scheduler; and

subtracts only said predetermined value from said total non-conforming

cell number.

52. (Previously Presented) The machine-readable recording medium on which is stored

a computer program according to claim 47, characterized in that said cell read-out

controlling section selects the cells to be sent in order of the cells of said CBR class, the

conforming cells and the non-conforming cells.

53. (Previously Presented) A machine-readable recording medium on which is stored a

computer program which when executed causes a computer to function as:

a CBR class bandwidth management section that measures a cell number of a

CBR class;

at least one class bandwidth management section that, based on received class information, determines a conformance or a non-conformance cell by cell to measure a conforming cell number and a non-conforming cell number by classes;

a class information allocation section that allocates the received class information of each cell to one class bandwidth management section out of said class bandwidth management sections:

a connection request generation section that, based on a total number of the conforming cells of said CBR class bandwidth management section and each of class bandwidth management sections, and a total number of the non-conforming cells of each class, generates a connection request to a switch scheduler; and

a cell read-out controlling section that, based on a conforming cell number and a non-conforming cell number of said CBR class bandwidth management section and each of said class bandwidth management sections, decides which cells are to be read out when a connection permission is received from said switch scheduler.

54. (Previously Presented) The machine-readable recording medium on which is stored a computer program according to claim 53, characterized in that said cell read-out controlling section:

in an event that either of the conforming cell or the non-conforming cell was included in the received CBR class, selects said CBR class; and

subtracts one from a count number of the conforming cell number in said CBR class.

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55. (Previously Presented) The machine-readable recording medium on which is stored a computer program according to claim 53, characterized in that said connection request generation section:

in an event that said CBR class was received, adds the conforming cell number of said CBR class;

in an event that said total conforming cell number exceeds a predetermined value, generates the connection request with a first priority to said switch scheduler; and

subtracts only said predetermined value from said total conforming cell number.

56. (Previously Presented) The machine-readable recording medium on which is stored a computer program according to claim 53, characterized in that:

said class bandwidth management section, in an event that said CBR class was not received, and yet that a remaining credit of a guaranteed bandwidth portion is one or more, adds the conforming cell number and the total conforming cell number in its class; and

said connection request generation section:

in an event that said total conforming cell number exceeds a predetermined value, generates the connection request with a first priority to said switch scheduler; and

subtracts only said predetermined value from said total conforming cell number.

57. (Previously Presented) The machine-readable recording medium on which is stored

a computer program according to claim 53, characterized in that:

said class bandwidth management section, in an event that said CBR class was not

received, and yet that a remaining credit of a guaranteed bandwidth portion is below one,

adds the non-conforming cell number and the total non-conforming cell number in its

class; and

said connection request generation section:

in an event that said total non-conforming cell number

exceeds a predetermined value, generates the connection request with a second priority to

said switch scheduler; and

subtracts only said predetermined value from said total non

conforming cell number.

58. (Previously Presented) The machine-readable recording medium on which is stored

a computer program according to claim 53, characterized in that said cell read-out

controlling section selects the cells to be sent in an order of the cell of said CBR class, the

conforming cell and the non-conforming cell.

59. (Previously Presented) A machine-readable recording medium on which is stored a

computer program which when executed causes a computer to function as:

a CBR class bandwidth management section that measures a cell number of a

CBR class;

at least one class bandwidth management section that, based on received class

information, determines a conformance or a non-conformance cell by cell to measure a

conforming cell number and a non-conforming cell number by classes;

a class information allocation section that allocates the received class information

of each cell to one class bandwidth management section out of said class bandwidth

management sections;

a connection request generation section that, based on a total number of the

conforming cells and a total number of the non-conforming cells of each class including

said CBR class, generates a connection request to a switch scheduler; and

a cell read-out controlling section that, based on the conforming cell number and

the non-conforming cell number in said CBR class bandwidth management section and

each of said class bandwidth management sections, selects cells to be read out in an order

of the cells of said CBR class, the conforming cells and the non-conforming cells when a

connection permission is received from said switch scheduler.

60. (Previously Presented) The machine-readable recording medium on which is stored

a computer program according to claim 59, characterized in that said cell read-out

controlling section:

in an event that either of the conforming cell or the non-conforming cell was

included in the received CBR class, selects said CBR class;

in an event that said CBR class comprises a class that includes the conforming

cell, subtracts one from a count number of the conforming cell number; and

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in an event that said CBR class comprises a class that includes the non-conforming

cell, subtracts one from a count number of the non-conforming cell number.

61. (Previously Presented) The machine-readable recording medium on which is stored

a computer program according to claim 59, characterized in that said cell read-out

controlling section:

in an event that the conforming cell was included in the received CBR class,

selects said CBR class; and

subtracts one from a count number of the conforming cell number in said CBR

class.

62. (Previously Presented) The machine-readable recording medium on which is stored

a computer program according to claim 59, characterized in that said connection request

generation section:

in an event that said CBR class was received, adds the cell number of said CBR

class;

in an event that the cell number of said CBR class exceeds a predetermined value,

generates the connection request with a first priority to said switch scheduler; and

subtracts only said predetermined value from the cell number of said CBR class.

63. (Previously Presented) The machine-readable recording medium on which is stored

a computer program according to claim 59, characterized in that:

said class bandwidth management section, in an event that said CBR class was not received, and yet that a remaining credit of a guaranteed bandwidth portion is one or more, adds the conforming cell number and the total conforming cell number in its class; and

said connection request generation section:

in an event that said total conforming cell number exceeds a predetermined value, generates the connection request with a second priority to said switch scheduler; and

subtracts only said predetermined value from said total conforming cell number.

64. (Previously Presented) The machine-readable recording medium on which is stored a computer program according to claim 59, characterized in that:

said class bandwidth management section, in an event that said CBR class was not received, and yet that a remaining credit of a guaranteed bandwidth portion is below one, adds the non-conforming cell number and the total non-conforming cell number in its class; and

said connection request generation section:

in an event that said total non-conforming cell number exceeds a predetermined value, generates the connection request with a third priority to said switch scheduler; and

subtracts only said predetermined value from said total non-conforming cell number.

65. (Previously Presented) A machine-readable recording medium on which is stored a computer program which when executed causes a computer to execute a controlling method of a virtual output queuing controlling device, said method comprising:

a first step of allocating received class information of each cell to one of a plurality of class bandwidth management sections;

a second step of measuring a cell number of a CBR class;

a third step of, based on the received class information, determining a conformance or a non-conformance cell by cell to measure a conforming cell number and a non-conforming cell number by classes;

a fourth step of, based on said cell number of the CBR class, a total number of the conforming cell of each class, and a total number of the non-conforming cells of each class, generating a connection request to a switch scheduler; and

a fifth step of, based on the conforming cell number and the non-conforming cell number in said CBR class bandwidth management section and each of said class bandwidth management sections, deciding which cells are to be read out when a connection permission is received from said switch scheduler.

66. (Previously Presented) The machine-readable recording medium on which is stored a computer program according to claim 65, characterized in that said fifth step comprises the steps of:

in an event that either of the conforming cell or the non-conforming cell was included in the received CBR class, selecting said CBR class; and

subtracting one from a count number of the conforming cell number in said CBR class.

67. (Previously Presented) The machine-readable recording medium on which is stored a computer program according to claim 65, characterized in that said fourth step comprises the steps of:

in an event that said CBR class was received, adding the cell number of said CBR class;

in an event that the cell number of said CBR class exceeds a predetermined value, generating the connection request with a first priority to said switch scheduler; and

subtracting only said predetermined value from the cell number of said CBR class.

68. (Previously Presented) The machine-readable recording medium on which is stored a computer program according to claim 65, characterized in that:

said third step comprises the step of:

in an event that said CBR class was not received,

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and yet that a remaining credit of a guaranteed bandwidth portion is one or more, adding

the conforming cell number and the total conforming cell number in its class; and

said fourth step comprises the steps of:

in an event that said total conforming cell number exceeds a predetermined

value, generating the connection request with a second priority to said switch scheduler;

and

subtracting only said predetermined value from said total conforming cell

number.

69. (Previously Presented) The machine-readable recording medium on which is stored

a computer program according to claim 65, characterized in that:

said third step comprises the step of, in an event that said CBR class was not

received, and yet that a remaining credit of a guaranteed bandwidth portion is below one,

adding the non-conforming cell number and the total non-conforming cell number in its

class; and

said fourth step comprises the steps of:

in an event that said total non-conforming cell number exceeds a

predetermined value, generating the connection request with a third priority to said switch

scheduler; and

subtracting only said predetermined value from said total non-conforming

cell number.

70. (Previously Presented) The machine-readable recording medium on which is stored a computer program according to claim 65, characterized in that, in said fifth step, the cells to be sent are selected in an order of the cell of said CBR class, the conforming cell and the non-conforming cell.

71. (Previously Presented) A machine-readable recording medium on which is stored a computer program which when executed causes a computer to execute a controlling method of a virtual output queuing controlling device, said method comprising:

a first step of allocating received class information of each cell to one of a plurality of class bandwidth management sections;

a second step of measuring a cell number of a CBR class;

a third step of, based on the received class information, determining a conformance or a non-conformance cell by cell to measure a conforming cell number and a non-conforming cell number by classes;

a fourth step of, based on a total number of the conforming cells in said CBR class and each of said class bandwidth management sections, and a total number of the non-conforming cells of each class, generating a connection request to a switch scheduler; and

a fifth step of, based on the conforming cell number and the non-conforming cell number in said CBR class bandwidth management section and each of said class bandwidth management sections, deciding which cells are to be read out when a connection permission is received from said switch scheduler.

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72. (Previously Presented) The machine-readable recording medium on which is stored a computer program according to claim 71, characterized in that said fifth step comprises the steps of:

in an event that either of the conforming cell or the non-conforming cell was included in the received CBR class, selecting said CBR class; and

subtracting one from the count number of the conforming cell number in said CBR class.

73. (Previously Presented) The machine-readable recording medium on which is stored a computer program according to claim 71, characterized in that said fourth step comprises the step of:

in an event that said CBR class was received, adding the cell number of said CBR class;

in an event that said total conforming cell number exceeds a predetermined value, generating the connection request with a first priority to said switch scheduler; and

subtracting only said predetermined value from said total conforming cell number.

74. (Previously Presented) The machine-readable recording medium on which is stored a computer program according to claim 71, characterized in that:

said third step comprises the step of, in an event that said CBR class was not received, and yet that a remaining credit of a guaranteed bandwidth portion is one or

more, adding the conforming cell number and the total conforming cell number in its

class; and

said fourth step comprises the steps of:

in an event that the total said total conforming cell number exceeds a

predetermined value, generating the connection request with a first priority to said switch

scheduler; and

subtracting only said predetermined value from said total conforming cell

number.

75. (Previously Presented) The machine-readable recording medium on which is stored

a computer program according to claim 71, characterized in that:

said third step comprises the step of, in an event that said CBR class was not

received, and yet that a remaining credit of a guaranteed bandwidth portion is below one,

adding the non-conforming cell number and the total non-conforming cell number in its

class; and

said fourth step comprises the steps of:

in an event that said total non-conforming cell number exceeds a

predetermined value, generating the connection request with a second priority to said

switch scheduler; and

subtracting only said predetermined value from said total non-conforming

cell number.

76. (Previously Presented) The machine-readable recording medium on which is stored a computer program according to claim 71, characterized in that, in said fifth step, the cells to be sent are selected in an order of the cells of said CBR class, the conforming cells and the non-conforming cells.

77. (Previously Presented) A machine-readable recording medium on which is stored a computer program which when executed causes a computer to execute a controlling method of a virtual output queuing controlling device, said method comprising:

a first step of allocating received class information of each cell to one of a plurality of class bandwidth management sections;

a second step of measuring a cell number of a CBR class;

a third step of, based on the received class information, determining a conformance or a non-conformance cell by cell to measure a conforming cell number and a non-conforming cell number by classes;

a fourth step of, based on a total number of the conforming cells and a total number of the non-conforming cells of each class including said CBR class, generating a connection request to a switch scheduler; and

a fifth step of, based on the conforming cell number and the non-conforming cell number in said CBR class bandwidth management section and each of said class bandwidth management sections, selecting the cells to be read out in an order of the cells of said CBR class, the conforming cells, and the non-conforming cells when a connection permission is received from said switch scheduler.

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78. (Previously Presented) The machine-readable recording medium on which is stored a computer program according to claim 77, characterized in that said fifth step comprises the steps of:

in an event that either of the conforming cell or the non-conforming cell was included in the received CBR class, selecting said CBR class;

in an event that said CBR class comprises a class that includes the conforming cell, subtracting one from the count number of the conforming cell number; and

in an event that said CBR class comprises a class that includes the non-conforming cell, subtracting one from the count number of the non-conforming cell number

79. (Previously Presented) The machine-readable recording medium on which is stored a computer program according to claim 77, characterized in that said fifth step comprises the steps of:

in an event that the conforming cell was included in the received CBR class, selecting said CBR class; and

subtracting one from the count number of the conforming cell number in said CBR class.

80. (Previously Presented) The machine-readable recording medium on which is stored a computer program according to claim 77, characterized in that said fourth step comprises the step of:

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in an event that said CBR class was received, adding the cell number of said CBR class;

in an event that the cell number of said CBR class exceeds a predetermined value, generating the connection request with a first priority to said switch scheduler; and

subtracting only said predetermined value from the cell number of said CBR class.

81. (Previously Presented) The machine-readable recording medium on which is stored a computer program according to claim 77, characterized in that:

said third step comprises the step of, in an event that said CBR class was not received, and yet that a remaining credit of a guaranteed bandwidth portion is one or more, adding the conforming cell number and the total conforming cell number in its class; and

said fourth step comprises the steps of:

in an event that said total conforming cell number exceeded a predetermined value, generating the connection request with a second priority to said switch scheduler; and

subtracting only said predetermined value from said total conforming cell number.

82. (Previously Presented) The machine-readable recording medium on which is stored a computer program according to claim 73, characterized in that:

said third step comprises the step of, in an event that said CBR class was not received, and yet that a remaining credit of a guaranteed bandwidth portion is below one, adding the non-conforming cell number and the total non-conforming cell number in its class; and

said fourth step comprises the steps of:

in an event that said total non-conforming cell number exceeds a predetermined value, generating the connection request with a third priority to said switch scheduler; and

subtracting only said predetermined value from said total non-conforming cell number.

83. (Previously Presented) A record medium that stores a program embodied as machine-readable instructions, said program causing a computer to function as:

a CBR class bandwidth management section that measures a cell number of a CBR class;

at least one class bandwidth management section that, based on received class information, determines a conformance or a non-conformance cell by cell to measure a conforming cell number and a non-conforming cell number by classes;

a class information allocation section that allocates the received class information of each cell to one class bandwidth management section out of said class bandwidth management sections;

a connection request generation section that generates a connection request to a switch scheduler, based on the cell number of said CBR class, a total number of the conforming cells of each class, and a total number of the non-conforming cells of each class; and

a cell read-out controlling section that decides which cells are to be read out when connection permission is received from said switch scheduler, based on said CBR class bandwidth management section and each of said class bandwidth management sections.

84. (Previously Presented) A record medium that stores a program embodied as machine-readable instructions in a medium, said program for causing a computer to function as:

a CBR class bandwidth management section that measures a cell number of a CBR class;

at least one class bandwidth management section that, based on received class information, determines a conformance or a non-conformance cell by cell to measure a conforming cell number and a non-conforming cell number by classes;

a class information allocation section that allocates the received class information of each cell to one class bandwidth management section out of said class bandwidth management sections:

a connection request generation section that, based on a total number of the conforming cells of said CBR class bandwidth management section and each of class

bandwidth management sections, and a total number of the non-conforming cells of each class, generates a connection request to a switch scheduler; and

a cell read-out controlling section that, based on the conforming cell number and the non-conforming cell number of said CBR class bandwidth management section and each of said class bandwidth management sections, decides which cells are to be read out when a connection permission is received from said switch scheduler.

85. (Previously Presented) A record medium that stores a program embodied as machine-readable instructions in a machine-readable medium, said program causing a computer to function as:

a CBR class bandwidth management section that measures a cell number of a CBR class;

at least one class bandwidth management section that, based on received class information, determines a conformance or a non-conformance cell by cell to measure a conforming cell number and a non-conforming cell number by classes;

a class information allocation section that allocates the received class information of each cell to one class bandwidth management section out of said class bandwidth management sections:

a connection request generation section that, based on a total number of the conforming cells and a total number of the non-conforming cells of each class, including said CBR class, generates a connection request to a switch scheduler; and

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a cell read-out controlling section that, based on the conforming cell number and

the non-conforming cell number in said CBR class bandwidth management section and

each of said class bandwidth management sections, selects cells to be read out in an order

of the cell of said CBR class, the conforming cells and the non-conforming cells, when a

connection permission is received from said switch scheduler.

86. (Previously Presented) A record medium that stores a program embodied as

machine-readable instructions in a machine-readable medium, said program causing a

computer to execute a controlling method of a virtual output queuing controlling device,

said method comprising:

a first step of allocating received class information of each cell to one of a

plurality of class bandwidth management sections;

a second step of measuring a cell number of a CBR class;

a third step of, based on the received class information, determining a

conformance or a non-conformance cell by cell to measure a conforming cell number and

a non-conforming cell number by classes;

a fourth step of, based on said cell number of the CBR class, a total number of the

conforming cells of each class, and a total number of the non-conforming cells of each

class, generating a connection request to a switch scheduler; and

a fifth step of, based on the conforming cell number and the non-conforming cell

number in said CBR class bandwidth management section and each of said class

bandwidth management sections, deciding which cells are to be read out when a connection permission is received from said switch scheduler.

87. (Previously Presented) A record medium that stores a program embodied as machine-readable instructions in a machine-readable medium, said program causing a computer to execute a controlling method of a virtual output queuing controlling device, said method comprising:

a first step of allocating received class information of each cell to one of a plurality of class bandwidth management sections;

a second step of measuring a cell number of a CBR class;

a third step of, based on the received class information, determining a conformance or a non-conformance cell by cell to measure a conforming cell number and a non-conforming cell number by classes;

a fourth step of, based on a total number of the conforming cells in said CBR class and each of said class bandwidth management sections, and a total number of non-conforming cells of each class, generating a connection request to a switch scheduler; and

a fifth step of, based on the conforming cell number and the non-conforming cell number in said CBR class bandwidth management section and each of said class bandwidth management sections, deciding which cells are to be read out when a connection permission is received from said switch scheduler.

88. (Previously Presented) A record medium that stores a program embodied as machine-readable instructions in a machine-readable medium, said program causing a computer to execute a controlling method of a virtual output queuing controlling device, said method comprising:

a first step of allocating received class information of each cell to one of a plurality of class bandwidth management sections;

a second step of measuring a cell number of a CBR class;

a third step of, based on the received class information, determining a conformance or a non-conformance cell by cell to measure a conforming cell number and a non-conforming cell number by classes;

a fourth step of, based on a total number of the conforming cells and a total number of the non-conforming cells of each class, including said CBR class, generating a connection request to a switch scheduler; and

a fifth step of, based on the conforming cell number and the non-conforming cell number in said CBR class bandwidth management section and each of said class bandwidth management sections, selecting cells to be read out in an order of the cell of said CBR class, the conforming cells, and the non-conforming cells, when a connection permission is received from said switch scheduler.